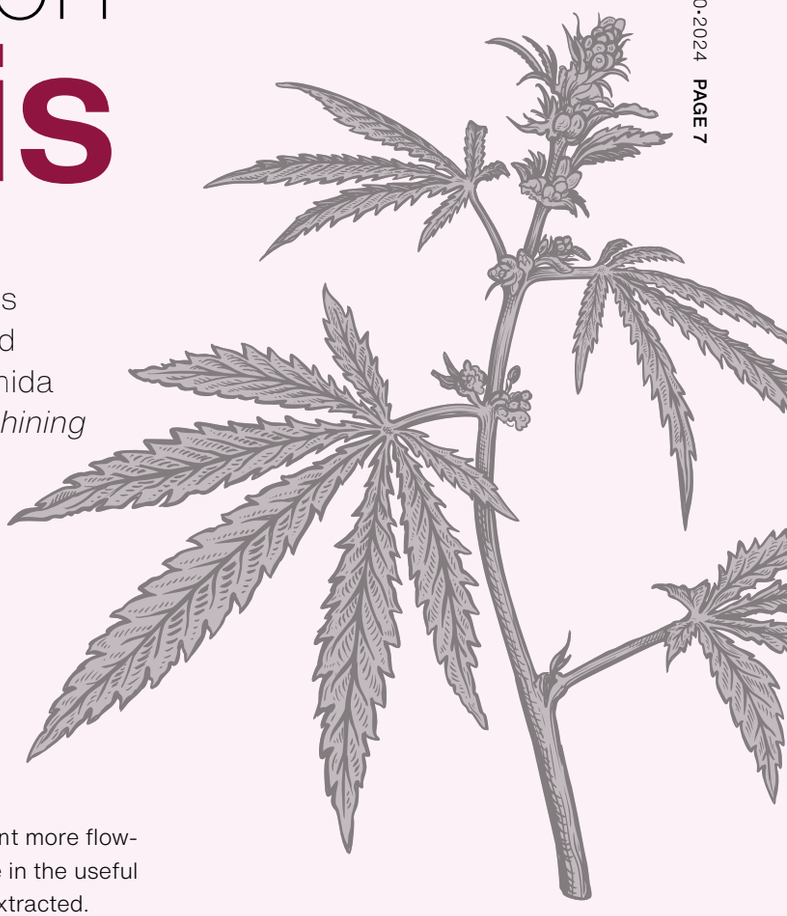
Shedding light on **Cannabis**



Of course, we all knew this long ago: cannabis plants need a lot of light. But now the link between light and yields has been demonstrated scientifically, as Wannida Sae-Tang (from Thailand) shows in her PhD thesis *Shining the spotlight on medicinal cannabis*. Text Roelof Kleis

In her doctoral thesis, Sae-Tang examines the cultivation of medicinal cannabis, but the results are equally relevant for home growers. In fact, the thesis reads as a manual for growers of all kinds. Sae-Tang focuses on the effect light has on the plant in the various stages of development, from the formation of roots through to flowering.
The researcher had never grown a cannabis plant before she came to Wageningen. 'I wanted to do research on the growth of medicinal plants in a controlled environment,' she explains. 'My supervisor Leo Marcelis asked whether I would be interested in a project on cannabis that was just starting. Thailand had just begun the legalization of medicinal cannabis around that time, so it was a good fit.'

Online lessons

Sae-Tang learned how to grow the plant from Aphria, the German producer of medicinal cannabis (and co-financer of the project). She got her grow lights from the Dutch lighting company Signify, another co-financer. The start was not easy. 'Three months after I came to Wageningen, the Covid pandemic broke out in the Netherlands.' So the cultivation lessons were online to begin with.
Sae-Tang´s experiments made one thing clear as daylight: cannabis likes the light. The plant can cope with at least three times as much light as other plants. That extra light has a beneficial effect too. One per cent more light in the flowering stage leads to one per cent more flowers and an equal increase in the useful substances that can be extracted.

The plant can cope with at least three times as much light as other plants

According to Sae-Tang, that doesn't mean you can expose the flowering plants to unlimited amounts of light. 'I assume there is a limit, even if we didn't reach that saturation point with our lighting. But if you give a plant more light, it also needs more CO_2, more water and the right temperature. That requires careful monitoring and alignment.'
In addition to the amount of light, Sae-Tang also studied the effects of the colour of the light. She found the colour doesn't matter much when the plant is flowering. That is good news for growers. 'It means you don't need any special lighting treatment and so you can make do with cheaper lights. But more research is needed on this topic.'
However, colour does have an effect during root formation. 'Cannabis plants are propagated by taking cuttings,' explains Sae-Tang. 'Root formation is usually encouraged by dipping the cutting in a solution containing the growth hormone auxin. I discovered that far-infrared light (just beyond visible red light, ed.) boosts root formation. The use of auxin for medicinal cannabis is not permitted everywhere, so far-infrared light could be a good alternative.'

Wannida Sae-Tang with the cannabis plants she grew: 'More far-infrared light boosts root formation in cannabis cuttings.' ◆ Own photo